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NASA Procedural Requirements

COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES**NPR 8705.6D**Effective Date: March 29,
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Subject: Safety and Mission Assurance (SMA) Audits, Reviews, and Assessments

Responsible Office: Office of Safety and Mission Assurance[| TOC](#) | [ChangeHistory](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [Chapter4](#) | [AppendixA](#) |
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Chapter 3. Safety and Mission Success Review (SMSR)

3.1 Overview

3.1.1 The SMSR is a pre-decisional review held to prepare Agency safety, engineering, and health and medical management to participate in program final readiness reviews preceding launches and significant flight activities, including experimental and test launch vehicles, sample return capsules, or other reviews as determined by the heads of NASA's Technical Authorities (TAs). The SMSR provides the knowledge, visibility, and understanding necessary for senior safety, engineering, and health and medical management to either concur or non-concur in upcoming program decisions to proceed with a launch or significant flight activity.

3.1.2 SMSRs can be Agency-led or Center-led.

3.1.2.1 Agency-led SMSRs are conducted for any activity requiring Mission Directorate-level or higher-level decision to proceed.

3.1.2.2 Center-led SMSRs, hereafter referred to as Safety and Mission Success Assessments (SMSA), are conducted for any activity requiring lower than a Mission Directorate-level decision to proceed. SMSAs are led by Center safety management as the delegated SMA TA.

3.1.2.3 Decisions normally meeting the criteria for a SMSR may be delegated to a SMSA with the approval of NASA's TAs.

3.1.3 The Chief, SMA, the Chief Engineer, or the Chief Health and Medical Officer, as the heads of NASA's TAs, may request a SMSR or SMSA for other safety and mission success-critical program or project activities to ensure all risks are mitigated to an acceptable level, including:

- a. Test readiness reviews, design certification reviews, and extravehicular activities.
- b. Reviews of tailoring or nonconformity of program and project SMA, engineering, or health and medical requirements that may affect mission success or facility operations.

3.1.4 The SMSR is designed to:

- a. Examine mission preparation status, open work issues, and concerns.
- b. Review and affirm the results of assurance processes and requirements that have been implemented over the life of the program.
- c. Verify compliance with the applicable requirements.
- d. Provide adequate knowledge and visibility for NASA's TAs to understand the risks associated with the safety and mission success of program launches, operational stages, and selected critical tests, utilizing input from cognizant program and Center-based safety and reliability review panels (e.g., ground safety, payload safety, range safety,

facility safety).

- e. Assess overall systems readiness.
- f. Prepare each TA to proceed to final readiness reviews.

3.1.5 Data presented at the SMSR or SMSA is developed by:

- a. Mission Directorate program authorities (such as Program Executive, Program Managers, and their equivalents).
- b. The TAs (Agency-level and Project-level)
- c. NASA Headquarters and NASA Center SMA organizations.
- d. NASA Headquarters and NASA Center Engineering organizations.
- e. NASA Headquarters and NASA Center Health and Medical organizations.
- f. Other independent assessment groups (e.g., NASA Engineering and Safety Center, NASA Independent Verification and Validation Program, Center-based independent assessment organizations).
- g. Applicable SMA and safety review panels.
- h. Any organizations, groups, or individuals representing formal dissents.

3.2 Roles and Responsibilities

3.2.1 The Chief, SMA is responsible for organization, coordination, and management of the SMSR process. To that end, the Chief, SMA delegates an OSMA SMSR Manager to:

- a. Coordinate within OSMA and with Center-based SMA Managers to identify which pending program and project events warrant a SMSR.v
- b. Coordinate with the TA co-chairs to determine whether to hold a SMSR or SMSA.
- c. Coordinate with effected organizations, groups, and individuals (see 3.1.5) to identify participants for a SMSR, establish an appropriate integrated schedule for SMSRs and SMSAs, and establish agendas for upcoming SMSRs.
- d. Maintain and update, based on operational experience, detailed SMSR process documentation, and work instructions.

3.2.2 The SMSR co-chairs (any combination of the Chief, SMA, the Chief Engineer, and the Chief Health and Medical Officer) are responsible for:

- a. Conducting a residual risk assessment poll of selected SMSR participants at the conclusion of the SMSR for a recommendation to proceed to the next level of review (e.g., Flight Readiness Review (FRR), Mission Readiness Briefing (MRB), or other, depending on which Mission Directorate is involved).
- b. Communicating any concerns arising from the review with the Associate Administrator for the Mission Directorate involved.
- c. Providing the logistic and resource support required for successful execution of SMSR and SMSA activities.

3.2.3 Center Directors, in coordination with the Center SMA, Engineering, and Health and Medical representatives, are responsible for:

- a. Participating in the SMSR process for each program and project applicable to their Center.
- b. Directing the implementation of a Center SMA-hosted SMSA process for reviews chaired below the Mission Directorate level in which the Center SMA, Engineering, and Health and Medical organizations participate.
- c. Conducting a poll of selected SMSA participants at the conclusion of the SMSA for a recommendation to proceed.
- d. Ensuring the basic elements of a SMSA address the SMSR elements and, to the extent possible, parallel SMSR residual risk reporting formats.
- e. Coordinating with program and project management and Center procurement organizations to ensure contracts provide for contractor support of SMSR and SMSA activities.
- f. Providing the logistic and resource support required for successful execution of SMSR and SMSA activities.

3.2.4 Program and Project Managers are responsible for:

- a. Ensuring accurate program and project material is presented at SMSRs and SMSAs that meets the specific needs of the review.

Note: SMSR/SMSA presentations are tailored for each specific mission and content is negotiated in advance of the SMSR/SMSA. For example, program and project managers may be asked to include a mission assurance process map and matrix in their SMSR/SMSA presentation that outlines the Program, Project, and Technical Authority roles and relationships as required and documented in the Program and Project SMA plan.

- b. Coordinating with Center SMA and Center procurement organizations to ensure contracts provide for contractor support of SMSR and SMSA activities when applicable and appropriate.

Note: This includes contractor support that may be needed to prepare SMSR/SMSA presentations or present information at the SMSR/SMSA.

3.3 SMSR Process

3.3.1 The OSMA SMSR Manager prepares a recommendation for identified potential SMSR/SMSAs and routes to the SMSR co-chairs for their recommendation.

3.3.2 Each SMSR co-chair makes a recommendation to proceed to SMSR.

3.3.3 In a SMSR, these procedures are followed:

- a. The OSMA SMSR Manager coordinates with participants to schedule, set the agenda, and collect the required inputs for the SMSR.
- b. Centers provide accurate material to the OSMA SMSR Manager that meets the specific needs of the review and present the materials during the SMSR.
- c. Program and Project Managers provide accurate material to the OSMA SMSR Manager that meets the specific needs of the review and present the materials during the SMSR.
- d. The OSMA SMSR Manager conducts the SMSR, assigns actions to participants, and documents the results from the final SMSR residual risk assessment poll.

3.3.4 In a SMSA, the delegated Center tailors and uses the procedures in 3.3.3 at their Center-level.

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